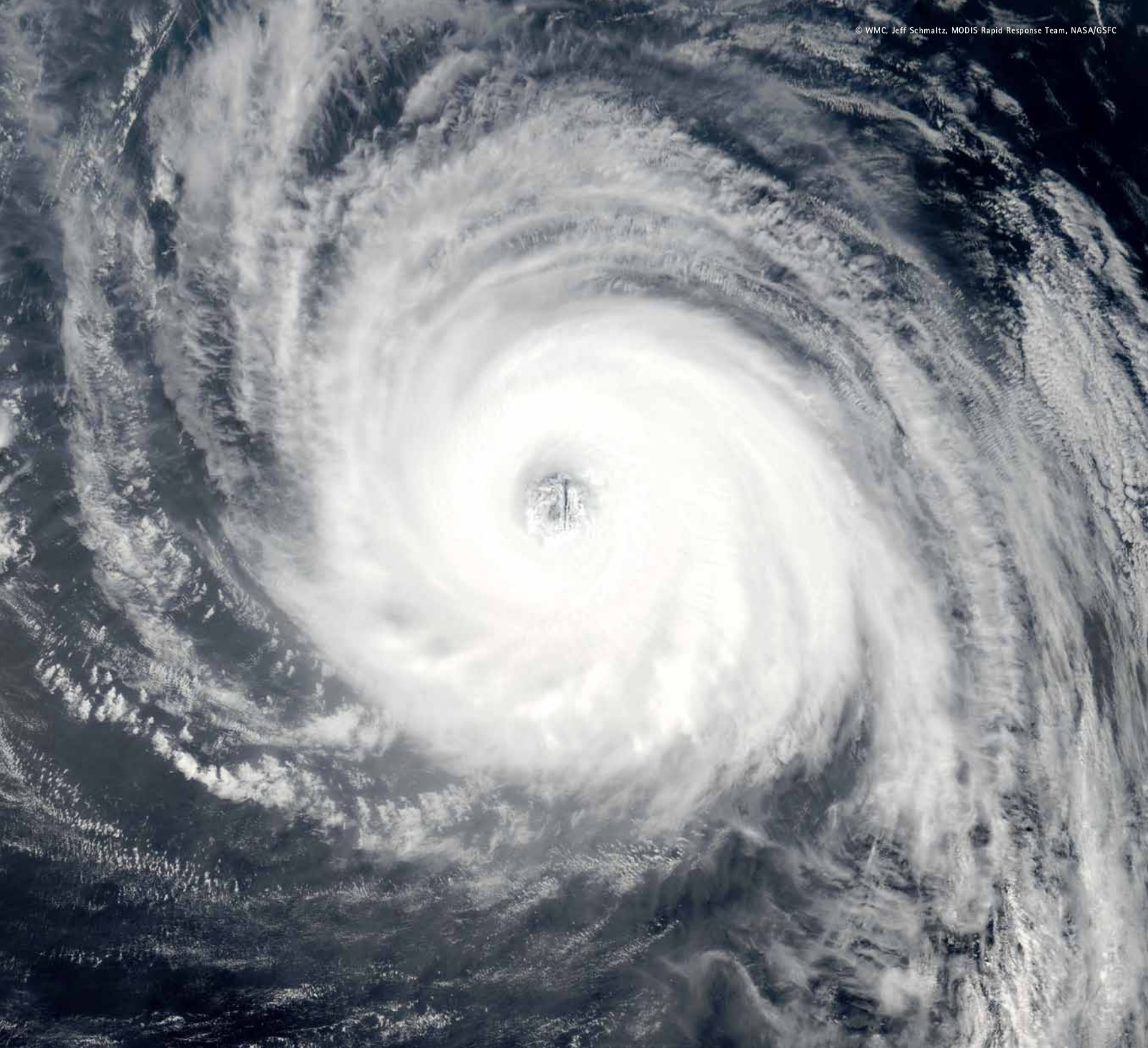

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ADDRESSING LAND ISSUES IN DISASTER RISK MANAGEMENT IN THE PACIFIC ISLAND COUNTRIES

FAIRE FACE AUX PROBLÈMES FONCIERS DANS LA GESTION DES RISQUES DE CATASTROPHE DANS LES ÉTATS INSULAIRES DU PACIFIQUE

ABORDAR LAS CUESTIONES RELATIVAS A LA TIERRA DE LOS PAÍSES INSULARES DEL PACÍFICO EN EL CONTEXTO DE LA GESTIÓN DEL RIESGO DE DESASTRES

ABSTRACT

LAND TENURE

LAND ADMINISTRATION

DISASTER RISK MANAGEMENT

CLIMATE CHANGE ADAPTATION

PACIFIC ISLAND COUNTRIES

The Pacific region is one of the most disaster-prone in the world. Rapid urbanization, conflict over land, and the establishment of informal settlements on hazardous sites further exacerbate the problems. These issues present a significant challenge for government agencies, which require capacity building to respond adequately.

Customary land predominates in many Pacific island countries and is central to decisions about land. In this paper we review previous disasters in the Pacific island countries to identify land issues that have emerged, and consider

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GESTION DES RISQUES DE CATASTROPHE

ADAPTATION AUX CHANGEMENTS CLIMATIQUES

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La région Pacifique est l'une des régions les plus exposées aux catastrophes dans le monde. Une urbanisation rapide, des différends pour l'utilisation des terres et l'établissement de zones de peuplement dans des zones sujettes aux catastrophes exacerbent la situation. Ces problèmes représentent un défi pour les organismes gouvernementaux, qui ont besoin de renforcer leurs capacités afin de réagir de manière adéquate.

Les terres coutumières prédominent dans beaucoup d'États insulaires du Pacifique et le respect de la coutume est primordial pour

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La región del Pacífico es una de las regiones del mundo más expuestas a catástrofes. Los problemas se ven exacerbados por una urbanización rápida, conflictos en torno a la tierra y el establecimiento de asentamientos informales en lugares propensos a peligros. Estas cuestiones plantean un desafío importante para los organismos gubernamentales, donde es preciso fomentar la capacidad para intervenir de forma apropiada.

Las tierras consuetudinarias abundan en numerosos países insulares del Pacífico y considerarlas es fundamental para adoptar

how land tenure and disaster management are administered.

We conclude that land and national disaster management office agencies must work together to address land issues in the context of natural disasters and that customary groups should be involved in disaster risk reduction activities and efforts to improve tenure security for all legitimate landholders. Capacity strengthening would benefit all groups involved.

les prises de décisions concernant les terres. Dans cet article, nous examinons quelques catastrophes qui ont frappé les États insulaires du Pacifique afin de déterminer les problèmes fonciers qui ont fait surface, et analysons la manière dont sont administrés les régimes fonciers et la gestion des catastrophes.

Nous terminons par la conclusion que les organismes nationaux de gestion des terres et des catastrophes naturelles doivent travailler de concert afin de répondre aux problèmes fonciers en contexte de catastrophe naturelle, et que les groupes coutumiers doivent être impliqués dans les activités de réduction des risques de catastrophe et dans les efforts consentis pour améliorer la sécurité foncière de tous les détenteurs de terres légitimes. Le renforcement des capacités serait profitable à tous les groupes concernés.

decisiones en torno a la tierra. En este documento se repasan catástrofes que se han producido en países insulares del Pacífico en el pasado con objeto de identificar las cuestiones que hayan surgido en relación con la tierra y estudiar cómo se administran la tenencia de la tierra y la gestión de catástrofes.

Se concluye que los organismos nacionales encargados de las tierras y aquellos que se ocupan de la gestión de catástrofes deben trabajar conjuntamente para abordar las cuestiones relativas a la tenencia en el contexto de las catástrofes naturales, y que los grupos consuetudinarios deberían participar en las actividades de reducción de riesgos de catástrofes y los esfuerzos para aumentar la seguridad de la tenencia de todos los propietarios legítimos. El fortalecimiento de la capacidad beneficiaría a todos los grupos intervinientes.

INTRODUCTION

There have been calls for improved integration of disaster risk reduction (DRR), climate change adaptation (CCA) and mitigation communities, but there are no specific details about how this could be done (Birkmann and von Teichman, 2010). One challenge that previously hindered effective disaster response, with implications for longer-term adaptation, was the disproportionate impact on the poor and vulnerable, particularly those with limited tenure security. According to Wisner and Luce (1993) disasters produce more marginalized people because many of those who survive are unable to recover their livelihoods, become destitute and are forced to live in even more vulnerable situations than before the disaster. Land-related impacts include land grabbing, involuntary resettlement and loss of access to land. This is evidenced by the growing literature on how land issues are best addressed in the context of Disaster Risk Management (DRM).

This article focuses on the challenges for land and disaster agencies in Pacific island countries (PICs) in terms of the linkage between disaster response and land issues, as well as highlighting lessons for improved DRM and longer-term adaptation to a changing climate. The PICs represent a particular set of geographic, economic and social circumstances and challenges. Firstly, the Pacific region is one of the world's most disaster-prone regions, impacted by both natural and climate-related hazards. According to the World Bank/GFDRR (2012) extreme events have affected approximately 9.2 million people in the region since 1950, causing 9 811 reported deaths and damage estimates totalling US$3.2 billion. Tropical cyclones are the major cause of loss of life and economic costs, but several other significant threats exist, including tsunamis and floods. For example, the 2007 Solomon Islands earthquake and tsunami caused losses equivalent to 90 percent of the 2006 recurrent government budget. The 2004 Cyclone Heta on Niue caused immediate losses of five times GDP and the 2009 Fiji floods in Nadi, Ba, and the sugar belt area, resulted in losses of F$350 million.

The Pacific region is one of the world's most disaster-prone regions

Regional vulnerabilities are compounded by severe limitations in adaptive capacity. Many of the PICs are small island developing states of least developed country status, and include several atoll nations that are particularly vulnerable

to rises in sea level. Their remoteness, small economic base and geographical spread results in higher energy and transportation costs and they represent unique challenges for responding to natural hazards and climate-related events. PICs invariably have limited capacity to respond to natural disasters and to implement adequate Disaster Risk Reduction (DRR) programmes without international assistance. Consequently disaster responses in the region must include a component of capacity building to achieve sustainable results (FIG, 2010). PICs also present unique land tenure challenges. Many PICs have a very high percentage of customary lands, as illustrated in Table 1. In these countries customary authorities are key stakeholders in both DRM and CCA and need to be part of responses.

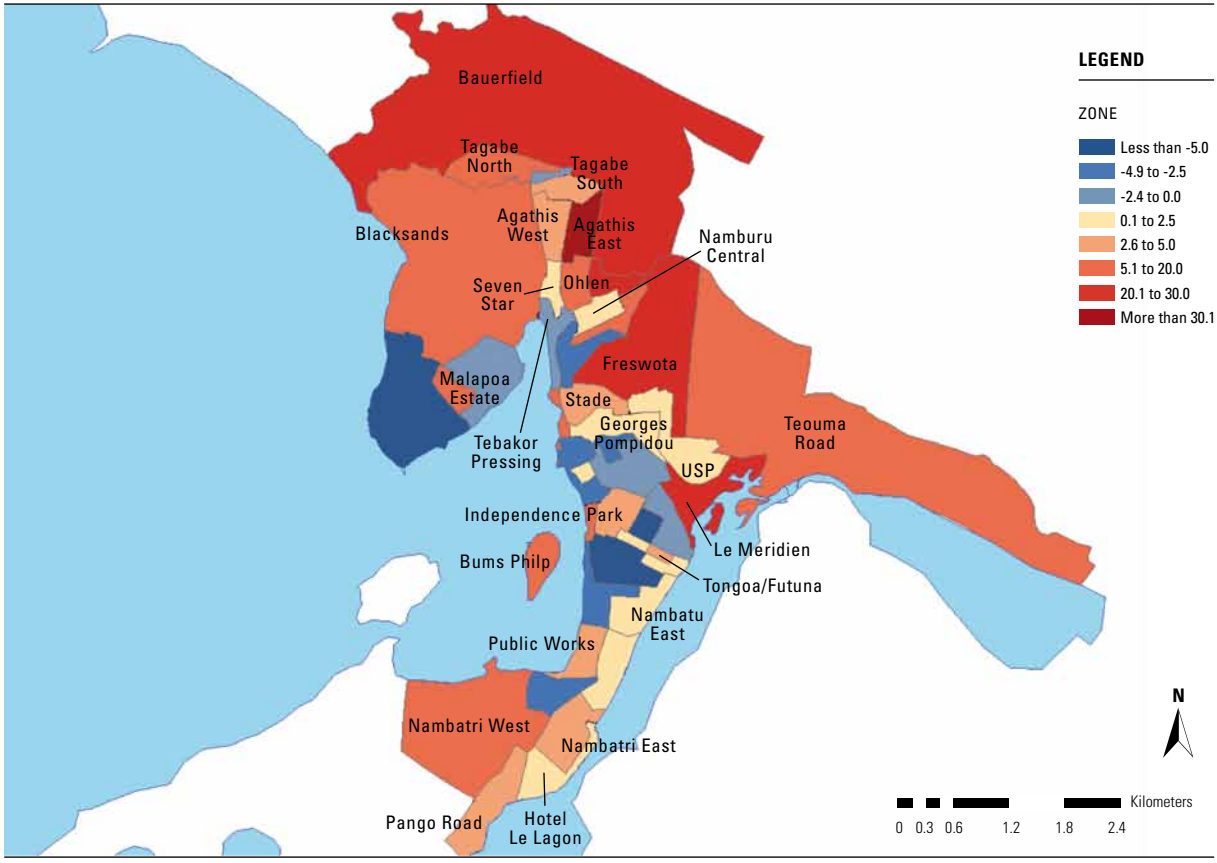
Urbanization also represents difficult problems for PICs, often resulting in conflict over land. There has been a marked increase in urbanization in the Pacific, where one in four people live in urban areas, and 12 out of the 22 countries and territories in the region have larger urban than rural populations (Secretariat of the Pacific Community, 2007).

Almost half the population in the Pacific (excluding Papua New Guinea) lives in towns and cities and there are very high population growth rates in Kiribati and peri-urban areas in Fiji and Port Vila, Vanuatu (see Figure 1).

Rapid demographic growth in the region has led to migration from smaller outer islands to larger ones and from rural areas to towns, especially national capitals (World Bank, 2000). Where most of a country is under customary tenure, urban expansion is typically not on to freehold land. In some cases the expansion occurs on state land, which while still presenting difficulties can to some extent be managed by the relevant land authorities. Expansion on to customary land, without the permission of the customary leaders, is much more problematic, leading to tensions between migrants and the customary groups.

The location of urban growth contributes to increased vulnerability when houses are built on land with a high level of exposure to potential disaster. There has been a rapid emergence of informal settlements, where people often lack formal tenure rights to occupy the settled land. Sometimes the occupancy is illegal and in some cases extra-legal (not against the law, but not recognized by the law). Often the land that is occupied by informal settlers is the least valued and most hazardous.

Figure 1
Population growth across greater Port Vila 1999–2009 (Trundle and McEvoy, 2015)



Against this background, this paper examines the challenges for land and disaster management agencies in responding to land issues while protecting legitimate property rights and access to land for the more vulnerable. The paper first summarizes land tenure and land administration challenges in the PICs that might inform improved DRM before examining existing approaches to DRM and lessons from previous disasters in the Pacific region. We argue

that land tenure is a critical consideration in the Pacific islands context when addressing disaster risk and longer-term climate change adaptation responses.

The methods used comprise a literature review and consultation with key government staff. Training on land issues in DRM was organized in 2011 in Fiji for 26 participants from land and DRM agencies from six countries: Fiji, Kiribati, Samoa, Solomon Islands, Tuvalu and Vanuatu. In preparation for the training, case studies were developed for each of the countries based on an extensive literature review and were sent to the training participants for their comments. The case study material scoped the existing governance arrangements, issues and challenges and lessons from previous disasters, but did not present ways forward. The major output of the training activity was an action plan for each country, prepared by their respective country delegates, to address land issues in DRM that were specific to their countries. The discussion and conclusions from this paper are synthesized from the existing literature and the predominant responses recommended in the action plans.

While there is a tendency to generalize issues in discussions concerning the Pacific islands, it is important to recognize that the patterns of land tenure and disaster risk vary considerably from country to country and also within countries. Therefore, the following discussion is generally limited in scope to the six countries involved in the training. We end by emphasizing the importance of tenure security for all legitimate land users and the implementation of responsible governance of tenure as part of an equitable DRR programme.

Land tenure is a critical consideration in the Pacific islands context when addressing disaster risk and longer-term climate change adaptation responses

LAND TENURE AND ADMINISTRATION IN PACIFIC ISLAND COUNTRIES

The impact of disasters on those with poor security of tenure, including indigenous peoples, informal settlers, tenants, farm labourers and sharecroppers, is well covered in the literature (e.g. Deutsch, 2008; Mitchell, 2010; Gorapava, 2010). Tenure security is a specific concern in the Pacific region and a major complicating factor in this context is customary tenure.

Peoples of the Pacific islands are passionate and protective about their rights to land and resources. The transfer and administration of rights to customary land depend largely on the social norms and kinship systems of the

customary group, which may vary considerably among different groups. Some of the PICs customary land is held at family level (e.g. Samoa), while other lands are held communally at village level (e.g. Fiji). Principles of inheritance and group organization can be complex and can change over time (e.g. Gaua Island in Vanuatu), where elements of inheritance patterns have changed between patrilineal and matrilineal, leading to conflict among men and women. The distribution and exercise of land rights is dependent on social hierarchies and social status.

The Marshall Islands Constitution preserves the traditional rights of land tenure that vest ownership in a hierarchy of three distinct interests, namely that of the *Iroijlaplap* (paramount chief), *Alap* (clan head) and *Dri Jerbal* (workers). Thus a single parcel of land will have customary ownership with three distinct interests. If there is no *Iroiji*, then those rights are deemed to be exercised by the *Alab* and the senior *Dri Jerbal* acting together. Land is passed matrilineally, thus theoretically (and traditionally) no Marshallese should be landless.

Many countries in the Pacific region have a very high percentage of customary lands (Table 1). In countries where the percentage of customary land is high, the customary landholders are central to many of the major decisions about land ownership and land use. Therefore, effective disaster response and land governance requires cooperation and consultation between government and customary landholders. While there is a tendency to focus on the importance of customary groups, there are also many third parties who occupy customary lands (through leases or legitimate informal occupation) and it is important that this group is included in the development and implementation of DRM.

Customary systems have traditionally provided access to land for all group members in some form, and hence have protected vulnerable members from severe poverty. Where customary authority is largely unaffected by external pressures, women have access to land to provide for themselves and their families, especially in subsistence or agriculture-based systems. However, strong gender discrimination may arise due to conflicting customary, social and economic pressures. While the norms related to women's rights to land vary among PICs, most women access customary land as daughters, nieces or wives rather than in their own right. Women's rights to land therefore

Table 1
Percentage of customary land in various Pacific island countries (AusAID, 2008)

	Public[a]	Freehold[b]	Customary
Cook Islands	Some	Little	95%
East Timor[c]	Some	Some	Most
Fiji	4%	8%	88%
Federated States of Micronesia	35%	<1%	65%
Kiribati	50%	<5%	>45%
Marshall Islands	<1%	0%	>99%
Nauru	<10%	0%	>90%
Niue	1.5%	0%	98.5%
Palau	Most	Some	Some
Papua New Guinea	2.5%	0.5%	97%
Samoa	15%	4%	81%
Solomon Islands	8%	5%	87%
Tokelau	1%	1%	98%
Tonga	100%	0%	0%
Tuvalu	5%	<0.1%	95%
Vanuatu	2%	0%	98%

a Includes Crown land and land owned by provincial and local governments.

b Includes land that is not strictly freehold, but similar in characteristics, such as the "perpetual estates" found in Solomon Islands.

c East Timor does not as yet have a separate legal category of "customary land", even though most of its rural land remains under customary forms of authority.

Source: Compiled and calculated from various sources, including interviews on field trips and published information.

depend on maintaining good marital and social relations. When husbands or male relatives move away in search of employment, or lose their life following a natural disaster, women also become responsible for food and livelihoods (Nelson, 2007; AusAID, 2008).

However, the nature of customary management of land is changing in the PICs. Under the influence of Christianity, customary land tenure variously absorbed concepts of inheritance, colonial rule and post-independence developments. Pressures such as urbanization and changes to traditional crops also caused fundamental changes to customary tenure systems, making adaptation difficult. In some PICs increased interaction with government organizations and Christian missions weakened customary authority and

The nature of customary management of land is changing in the Pacific island countries

caused confusion over customary land tenure principles such as inheritance and ownership of customary land. Investors introduced new land uses, large-scale harvesting, agribusiness, tourism, roads and other infrastructure, which had an impact on traditional practices. The result was a weakening of some customary authorities, which led to local conflict. Commercial land development opportunities for customary groups can also reduce the effectiveness of customary authority (Pacific Islands Forum Secretariat, 2008).

Conflict over land in the Pacific islands

Natural disasters can lead directly to land conflicts and in the Pacific region conflict over land is a major issue. The PICs can learn from international experience on conflict management and post-disaster responses. Table 2 draws on these lessons and provides some examples of the land issues that can lead to conflict after natural disasters.

Table 2
Potential sources of conflict over land for various natural disasters (Mitchell, 2011)

Type of natural disaster	Land issues that may lead to conflict
Floods	→ Resettlement with host communities may create tensions between displaced people and host families → Floods cause damage to land through erosion and debris deposits, making land unusable. People may seek land used by others to resume livelihoods, which can create the potential for conflict. → Floods may clear boundary markers, causing disputes over the extent of land ownership or land-use rights. → The return of displaced people to their land before it is safe to do so may create tensions with authorities. → Opportunistic land grabbing can lead to conflict over land rights.
Tropical cyclones	→ Destruction leads to temporary or permanent displacement. Choices of sites for resettlement may create conflicts if there is inadequate local consultation. → Permanent resettlement away from hazard-prone coastal areas may create tensions if it is on customary lands or previously used State lands. → For pre-disaster lands without legal legitimacy, there are risks of land grabbing that may lead to conflicts. → Resettlement of people with insecure tenure away from coastal areas to allow for development can lead to conflict.

Earthquakes	→ Destruction of buildings creates many displaced people. Inadequate consultation with displaced people of host communities may lead to conflicts within settlement camps. → Destruction of buildings and markers that defined the extent of pre-disaster ownership can lead to disputes over the extent of ownership. → Tenants and informal settlers may lose access to land, which may lead to conflict.
Tsunamis	→ Resettlement with host communities may create tensions. → Considerable erosion and movement of lands make some lands unusable after the disaster. There may be conflict if people use land which is claimed by others, or if displaced people are not consulted in relocation and resettlement. → Damage to buildings and survey markers may lead to disputes over where pre-disaster land parcels were and the location of boundaries. → Damage to land records and boundary markers may lead to disputes over ownership and location of boundaries. → Resettlement onto customary lands or allocated state lands may create tensions and lead to conflict.
Drought	→ Prolonged drought may force pastoralists to search for alternative water sources on land that is claimed by others. → Recognition of land tenure or land-use rights by government may remove customary rights of migration between seasons, causing conflicts at times of drought. → Where collective or customary ownership arrangements have broken down due to prolonged drought, there may be increased conflict over land.

Natural disasters can also exacerbate existing tensions over land. In many PICs there are tensions between customary groups and people from outside the customary group. In extreme cases this leads to violent conflict. For example, violent conflict erupted in a number of squatter settlements on the edge of Honiara among residents and settlers from the island of Malaita following World War II and also with migrants working on the Gold Ridge mine and plantations. Much of the land occupied by settlers was high-quality customary land, which caused tensions. If a future disaster were to afflict this area there is potential for existing tensions to escalate if not adequately understood and addressed during recovery and reconstruction phases.

There can also be tensions among different ethnic groups. For example, in Fiji customary lands cannot be bought or sold, except by the government and only for public use. However, non-reserve land (excess needed for house and subsistence) can be leased to third parties. As less than five percent of Fiji's land is available as freehold, most farmers (mainly of Indian descent) are forced to lease land. Political intervention that regulated the agricultural land rent at very low levels and resulted in substantial leaseholds led to political instability between the two ethnic groups. Thus some customary landowners did not renew leases and many of the farmers then migrated to the urban areas, often setting up in squatter settlements (typically on government lands such as mangrove swamps). Unfortunately much of the land under agricultural leases was never released and has become overgrown.

Land acquisition and compensation

Lessons from previous disasters in the Pacific islands confirm that land will need to be acquired by government for rebuilding and for new infrastructure. This may be acquired by agreement and purchase, or by formal land acquisition processes, in which case compensatory payment is made to the landowners. However, there has been a history of disputes in the Pacific islands over the process and detail of compensation offered in relation to land acquisition. One of the challenges is to determine a reasonable market value for the (typically customary) land acquired. There may be conflicting claims of ownership and no formal records of customary lands. There may be no formalized market and little or no market data that valuers can use (Mitchell and Myers, 2013).

Valuation of land in the PICs, even without dealing with a disaster, is challenging because of the small inefficient markets, lack of market data and poor or non-existent property records. Valuation of inalienable customary land is a very specialized and complex field as legal ownership is often not clearly defined and because it often cannot be sold except to the government there are few or no market transactions to inform the process.

With little to no market to estimate value, customary owners tend to be suspicious of government offers for their land, and land owners have been known to block government work until they have received the price they expect. An academic from PNG coined the terms Ransom Method or Payment

for Peace (Bannerman, 1993) to value such customary lands. One example was during the Fiji 2000 coup when landowners who had much land taken for the Monosavu Hydroelectric Dam felt they had been cheated because they did not receive compensation for the watershed lands. As they were not allowed to harvest their timber they took over the power plant, causing extensive damage and cutting power to half of Fiji. Eventually the government agreed to pay over $50 million in compensation over a 90+ year annuity.

As a further driver of conflict, there have been several high courts (Canada, New Zealand and Tonga) that have specifically decided that inalienable customary lands are worth less than comparable freehold land. Thus, an outsider may own a piece of freehold land next to an identical piece of customary land, and when both are taken for the same purpose the outsider could be entitled to more compensation than the customary owner.

Thus the unique, complex and often ambiguous issues associated with valuing customary lands means it is a sphere of valuation not often encountered by mainstream valuers. It has been described as a special field of real property valuation that frustrates many of those who accept such assignments and has anomalies that mock the practitioners of valuation.

Several examples are also provided of conflict between landholders and government over plans to resettle people, and over the compensation offered. This is a serious issue for governments to address to improve responses to disasters. At the time of writing, the Global Land Tools Network is developing guidance material on valuing non-formal tenures that will help address gaps in the knowledge.

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Capacity challenges

Previous disasters illustrate the increased demands that land agencies face during post-disaster response, recovery and reconstruction phases. After a natural disaster the existing capacity limitations of land agencies are magnified by damage to buildings and land records, boundary markers and surveying infrastructure. This makes adjudication of legitimate rights to land and the identification of pre-disaster boundaries more difficult. Problems are further exacerbated by the loss of experienced staff. For example, after the 2009 Samoan tsunami, resettlement away from vulnerable coastal lands

required relocation of infrastructure, including water supply. Before this could happen the Department of Lands had to upgrade and extend the geodetic network into the new areas to meet the demand of land development (FIG, 2011). In another example, Papua New Guinea is particularly vulnerable to natural disasters and mapping and assessment of the climate risk areas is important. However, limitations in capacity and problems with land records create significant difficulties in surveying the boundaries of the customary lands that cover 97 percent of the country and represent uncertainty for climate change adaptation.

Most PICs have never formally registered all their land, particularly customary lands. For those that have, records are often poorly kept. For example, in Kiribati all the land records are kept on open area shelves in one office. There are no electronic records, thus a disaster such as a tsunami could result records being lost, as could an office fire. Vanuatu, with the help of AusAID, has been working to convert land records into Geographic Information System (GIS) and other electronic records.

Capacity, as in qualified staffing, has always been a challenge in PICs, as often the most qualified staff emigrate to Australia, New Zealand or the USA. Also, many local valuers came straight from university to valuation offices with little or no mentoring, as is the case for Kiribati.

DISASTER RISK MANAGEMENT IN THE PACIFIC REGION

Institutional arrangements

Disaster management in PICs is organized under the National Disaster Management Office (NDMO). However, depending on the country, the NDMO is established under different ministries, for example, the Ministry of Rural and Maritime Development in Fiji, the Ministry of Home Affairs in the Solomon Islands, the Ministry of Natural Resources and Environment in Samoa and the Office of the President in Kiribati. The overarching mission of the NDMO is to build national resilience to disasters by developing, organizing, coordinating and implementing DRM activities in their respective countries. The responsibilities of the NDMO have increased in recent years. Initially, the

NDMO, and its predecessor, focused only on emergency response. For example, the first agency for disaster management in Fiji was created in 1979 and was called EMSEC (Emergency Services Committee). In 1990, this agency was also put in charge of prevention, mitigation, awareness, recovery and rehabilitation and was renamed NDMO. The new responsibilities are recognized in the internal organization of the NDMO. For example, Samoa has two sections, one for DRR and one for DRM. Similarly, Fiji's office is composed of three units, one focusing on policy, research and disaster management, one on training, education and awareness and one on emergency planning and coordination.

The activities of the NDMO in the different countries are guided by policies and plans describing the roles and responsibilities of the different stakeholders before, during and after a disaster. The Natural Disaster Management Act in Fiji was adopted in 1998 (Fiji NDMO, 1998), in Samoa the guiding policy is the Disaster and Emergency Act 2007 (Government of Samoa, 2007), in Vanuatu the Disaster Risk Reduction and Disaster Management National Action Plan (2006–2016) was published in 2007 (Government of the Republic of Vanuatu, 2007) and in the Solomon Islands the National Disaster Risk Management Plan was adopted in 2010 (Solomon Islands' Government, 2010). In Kiribati, the National Disaster Risk Management Plan was published in 2012 (Government of Kiribati, 2012) and the Tuvalu National Strategic Action Plan for Climate Change and Disaster Risk Management 2012–2016 was adopted in 2013 (Government of Tuvalu, 2013).

During emergencies, a specific response structure is put in place. For example, in Fiji, Kiribati, the Solomon Islands and Vanuatu, a National Emergency Operation Centre (NEOC) takes decisions and coordinates actions of all stakeholders (Fiji NDMO, 1998; Government of the Republic of Vanuatu, 2007; Solomon Islands' Government, 2010; Government of Kiribati, 2012). In Samoa, the National Disaster Council chaired by the Prime Minister provides strategic direction and decision-making as required (Government of Samoa, 2007). In Tuvalu, the National Coordination Centre (NCC) is designed to serve as the central control focal point for all response operations (Government of Tuvalu, 2013). In all these countries, the NDMO is strongly involved in the response mechanism. Some of the countries have adopted the new humanitarian architecture, also termed the humanitarian reform,

and have organized their emergency responses into clusters, regrouping the various stakeholders according to sectors to improve cooperation and limit duplication and gaps, with the NDMO at the core of the organization. Fiji (eight clusters) and the Solomon Islands (six clusters) are good examples of this new type of organization. However, none of the clusters focuses on the land issue theme.

Links with climate change adaptation

As mentioned above, the policies guiding NDMO actions in some countries are relatively established but are currently being reviewed in the context of climate change. Based on the importance of climate change impacts for the PICs, and on the similarities between some climate change adaptation and DRR activities, several countries in the region decided to follow Tonga's lead and develop a Joint National Action Plan (JNAP) that includes climate change and DRM actions. Currently 14 countries out of 15 in the region have developed or are developing a JNAP (UNISDR, 2014). Tonga was the first country to endorse a JNAP in 2010 and Fiji is currently devising a JNAP to replace the Natural Disaster Management Act endorsed in 1998 (Fiji NDMO, 1998). This action is led by the countries, but is supported by several development partners, including Council of Regional Organisations in the Pacific (CROP) agencies (Secretariat of the Pacific Regional Environment Programme - SPREP, Secretariat of the Pacific Community, GeoScience Division - SPC-SOPAC) and international partners and donors (e.g. ADB, UNDP).

Different programmes and projects are now integrating climate change adaptation and DRR activities at community or local government levels. As one example, the USAID-funded Coastal Community Adaptation Project (C-CAP) focuses on building the resilience of vulnerable coastal communities to withstand more intense and frequent weather events and ecosystem degradation in the short term, and sea level rise in the long term (DAI, 2012). The activities under this project cover 12 countries and combine risk mapping, DRR and adaptation to future climate. Similarly, the recent Pacific Risk Resilience Programme, funded by the Australian government and implemented by UNDP, aims to strengthen the resilience of selected Pacific island communities to disasters and climate change related risk (UNDP, 2012).

Challenges

Challenges faced by NDMOs in the region are varied. One major challenge is the capacity of NDMO. The number of staff is generally low for the sectors they are responsible for. For example, there are 12 staff in Fiji (Tagicakibau, 2014) and nine in Samoa (Ministry of Natural Resources and Environment, 2013). Moreover, some of the staff are more administrative than technical (Tagicakibau, pers. comm., 2014).

Another challenge, especially for countries such as Kiribati, Tuvalu and the Solomon Islands, is the provision of timely help to islands that are far away from the main island. Several stakeholders have pre-positioned supplies in different areas that can cover the needs of the population for a short time, but transporting large quantities of relief supplies to distant islands is still difficult. This was the experience after the earthquake and tsunami that devastated the Solomon Islands in 2007 (IRFC, 2009).

Another challenge is represented by the many actors in the DRM sectors, especially at a community level, who do not transfer information on their projects to the NDMO. As a result, information is fragmented and community DRR plans may not be aligned with national procedures (Dobui, pers. comm., 2014).

LESSONS FROM PREVIOUS PACIFIC ISLANDS DISASTERS

The growing international literature on addressing land issues in DRM emphasizes that needs vary according to type of disaster and local context. Hydrometeorological disasters are common in parts of the Pacific region and can lead to extensive damage to land and homes, with people displaced for prolonged periods. However, geo-physical disasters are less predictable and can come with little warning and result in extensive damage and displacement of people. The level of risk is more difficult to identify because of their infrequent nature (Mitchell, 2011). Water security and salinization also represent major long-term threats to the Pacific islands, with direct implications for land tenure.

However, there are some common themes for most disasters, including the risk of loss of access to land and property rights for displaced people with

poor tenure security. This often disproportionally affects the poor, women, elderly, children, ethnic minorities, indigenous persons and people who were internally displaced prior to the disaster. A central argument of this paper is that all legitimate rights to land tenure and resources should be formally recognized by government and other stakeholders, including being explicitly considered in national DRR programmes. A review of the impact of previous disasters in the Pacific islands indicates that these issues also apply to PICs. A serious consequence of loss of land and migration caused by displacement has been violent conflict over land.

All legitimate rights to land tenure and resources should be formally recognized by government and other stakeholders, including being explicitly considered in national DRR programmes

Short-term displacement and long-term relocation have occurred in the Pacific region after disasters and climate-related impacts. In most of the cases, the population is moved to evacuation centres where they remain for a few days, a few weeks at a maximum, before going back to their homes. This was the case in Fiji after the floods in 2009 (Government of Fiji, 2009) and 2012 (Fiji NDMO, 2013), and Tropical Cyclone Evan in 2012 (Government of Fiji, 2012). The situation was slightly different after the flash flood that affected Honiara in early April 2014. More than 7 000 people were moved to evacuation centres (radionz.com, 2014), but by mid-April the government was encouraging and supporting repatriation, although about 1 500 refugees remained in the evacuation centres in Honiara past Mid-June 2014 waiting for the government to organize land for them to move to (radioaustralia.net.au, 2014).

Where possible, it is easier to relocate affected people on state-owned land because it limits land disputes and allows faster transfer of land ownership, illustrated by what was done on Gizo Island after the earthquake and tsunami affected the Solomon Islands in 2007. Gizo Island has over 2 000 hectares of alienated land held by the Commissioner of Lands, excluding the Gizo township. The affected settlements along the southern coastal areas of Gizo Island comprised freehold or perpetual titles held by some of the settlers. Subdivisions along the southern coastal area were all freehold tenure, also known as perpetual title. The Ministry of Lands, Housing and Survey agreed that in terms of relocating displaced settlers on Gizo, the responsibility rested solely with the Provincial Lands Task Force who were responsible for preparing a local planning scheme of the areas occupied by the displaced population. A survey of the proposed settlement areas included peripheral surveys, with

the option of formally legalizing the occupation of the public land and granting fixed-term estate leasehold titles to the displaced settlers at a later date. In the context of land tenure and climate change, the insecurity of tenure resulting from the resettlement of coastal communities on both state owned lands and customary land is a policy matter for the government and key stakeholders. Shifting occupation status played significantly to the displaced families and individuals affected by the disaster (Gorapava, 2010).

Relocation and resettlement of rural communities is complex and where coordination and implementation of the processes towards reconstruction are lacking, resentment and illegal activity can be expected. These adverse situations often contribute to the cost of securing a title on government-owned land. In the case of Gizo there were very few secured titles in the rural areas and therefore any relocation had to be absorbed by the customary lands. The active participation of the rural landowning groups and community leaders was important in addressing the relocation of disaster stricken communities. The involvement of the Provincial Lands Task force and relevant sectors, in this case both Western and Choiseul provincial chief physical planners, was critical in identifying suitable low risk sites and taking responsibility for initiating a village planning scheme (Gorapava, 2010).

The customary land tenure system offers flexibility for relocation in some situations. In Samoa coastal villages and infrastructures located along the coast were destroyed by the tsunami in 2009 and needed to be permanently relocated inland. Infrastructure networks (roads, water, electricity and sanitation) to support relocation also had to be planned. For example, the District Hospital of Poutasi was damaged, and the primary school next to it was destroyed and had to be relocated. Since those facilities could not be rebuilt safely at the same site, they had to be relocated. Regarding the allocation of new land to build the facilities, it needed to be cleared before starting to build. These issues have been resolved and the hospital and school are now in use.

Villages and people also needed to be relocated. Some people spontaneously relocated inland to another land parcel owned by their community, but the relocation of others required pressure from the authorities, and those people returned later to their original land. This was for various socio-cultural reasons: ocean-based livelihood, social organization, extended family ties, strong

community structures, customary land ownership where occupation is the basis for right to tenure, powerful links to the village church and emotional ties with ancestral grave sites on traditional land. All these reasons make it difficult for a community to relocate away from their original location voluntarily. In most cases the topography, with cliffs near the coastline, allowed the resettlement of villages close to their original location, on community-owned land. Most families who lived on the coast also owned farmland inland. The initial observation was that the majority of the affected families who remained inland occupied their own lands. There was however a small percentage of persons who remained in host family properties on which they were not able to place a long-term claim. They were also not able to buy rights for such land or alternative land because customary land cannot be sold. The authorities felt that such problems could be resolved through interventions of self-governance mechanisms at the local level and through the customary land tribunal, where the affected parties could be helped to negotiate an exchange of land rights.

Climate change impacts can also require permanent relocation, though with a longer time period available for planning. A positive example of such relocation is the Vunidogoloa Village in Fiji. The major threat faced by the village is sea level rise, which was common during storm surges. The villagers asked the state to relocate their village. The new location is at Kenani, about three kilometres from the previous location, further inland and on higher ground. The new location is safer for the villagers, closer to the main road, and also provides more land for farming and the establishment of fishponds. Because of the natural resources at the new village site and the short distance from the previous location, it was considered that the livelihoods of the villagers (fishing, agriculture, forestry) would not be affected by the relocation. The government organized this relocation as an integrated action by the Ministry of Local Government, Urban Development, Housing and Environment, the Ministry of Rural and Maritime Development and iTaukei Affairs. Although no specific indication is given regarding the land issues for this relocation, the new site was installed on land that was also owned by the same *mataqali*, so no specific negotiation with another landowner was needed. The construction work at the village was completed in 2014 and the villagers have since moved to their new homes.

The risks associated with future climate change, together with overpopulation in the urban centre of Tarawa, Kiribati, led to the development of a programme funded by the Asian Development Bank (ADB) and the Japan Special Fund, called the Integrated Land and Population Development Program on Kiritimati Island (ADB, 2006). One of the goals of the programme was to encourage voluntary resettlement of about 30 000 settlers from the main island of Tarawa to Kiritimati Island, an atoll that represents 70 percent of Kiribati's land mass, but which is located 2 000 km away from the capital. This programme would have resolved the severe overcrowding on Tawara (with the area of Betio Islet having a population density of nearly 8 000 persons per square kilometre, similar to that for Hong Kong). While the government of Kiribati has been particularly pro-active in addressing the severe climate-induced displacement crisis by focusing on resolving current overcrowding and adopting creative policy measures designed to promote domestic relocation to islands such as Kirimati, it remains unclear as to what extent the measures will be adequate in the longer term. Problematically, Kiritimati is only four metres above sea level, which means that people will eventually be forced to abandon the island due to rising sea levels. This programme was not completed due to a lack of commitment from the government to provide the essential infrastructure on Kirimati Island (ADB, 2009).

Case Study – Resettlement away from Gaua Island in Vanuatu

Some of the difficulties associated with the displacement of people because of natural disasters can be alleviated if planning is done in advance. A good example is the contingency plan for the relocation of Gaua Island (Vanuatu) inhabitants in the case of eruption of the island's volcano (Vanuatu and OCHA, 2010). The plan was developed after the eruption of Mount Gharat on November 18th 2009 resulted in evacuation of 423 people from the western side of the island, with plans in place to evacuate an additional 200 people if necessary. However, continuing activity of the volcano led to preparation of a contingency plan to evacuate the entire population (2717 people) to Vanua Lava Island. The evacuation process would need to be implemented urgently because the worst-case scenario suggests that the volcano could erupt shortly after the first early warning.

One of the major issues was the availability of land on Vanua Lava Island, which hosts a population the same as that of Gaua and is relatively small to accommodate such a large additional population. The identification of available land by the provincial disaster committee of Torba, preferably public land free from land disputes that could be used for medium to long-term relocation, was the key gap to fill in the relocation plan. Decisions were taken that indicated land ownership would remain the same and would not transfer to the Gaua people. One piece of land located in the west of Vanua Lava, owned by the Anglican Church, was considered for medium to long-term (up to one year) relocation, while another, mostly undeveloped and located in the northeast, was selected for long-term relocation. Emergency facilities and assistance will be provided for relocation at both sites, including health, WASH (water, sanitation and hygiene), site planning, site management and shelters, food and non-food items, agriculture, education and protection. Logistics, communication and coordination to support relocation are also considered. The first site was deemed the most viable short-term option for relocation (Vanuatu NDMO and OCHA, 2010), but is only four hectares and with addition of 1 900 people would allow only 21 m^2 per person or 112 m^2 per family, which is below the SPHERE standards (The Sphere Project, 2004). Special care was taken to ensure that the most vulnerable groups, such as children, elderly, disabled and pregnant and lactating women, would be a priority (Vanuatu NDMO and OCHA, 2010). Special information was disseminated, indicating that individuals or families with family members from these groups have to ensure that they were properly accompanied to evacuation points and at the transit and relocation sites by able and informed community members.

WAYS FORWARD

Responses to the particular challenges outlined above can be considered in the context of a DRM framework that commences with DRR followed by a cycle of emergency response, recovery and reconstruction, and which then informs further DRR. The following discussion considers how land issues might be addressed in the PICs at each of these stages.

Disaster mitigation and preparedness

Greater disaster-resilient development requires grounding risk considerations in development decisions. According to the World Bank/GFDRR (2012), current governance arrangements at regional and national levels make it difficult to facilitate integration of risk considerations into development. In many cases separate institutional, legal and policy frameworks exist for CCA and DRR, and have weak links with the development sectors. An exception is the development of the National Green Growth Framework for Fiji, which incorporates climate change adaptation and DRM into development.

More resilient development requires stronger coordination among the multitude of stakeholders in the fields of DRR, CCA and development. Improved coordination is needed among donors, development partners (including NGOs) and regional organizations to improve harmonization and resource use. This will also reduce the burden on national capacities, and boost responsiveness to needs and priorities.

An outcome focus is needed, and among the important contributing tools are land-use planning, building codes and hazard-risk assessment. Another key challenge in the context of climate change for the land sector is decisions about resettlement. Resettlement is inherently complex and poor decisions can have devastating effects on livelihoods and social frameworks.

The FAO regional assessment recommended that governments "ensure that displaced people receive long term security of tenure in the areas in which they are relocated." Intergovernmental cooperation would be required if it becomes necessary to resettle large numbers of people in other countries. This consultation also noted the importance of reducing hazard risk in the process stating, "Governments should adopt adaptation and mitigation policies and risk management strategies for tenure of land and other natural resources that do not further exacerbate the impacts of climate change".

Emergency response

The focus for all government agencies during the early stages of an emergency response is saving lives, protecting health and providing shelter. Land agencies need to assess the damage to land records and the capacity of land agencies and customary groups to respond. Land tenure is not an immediate concern,

but in the early recovery phase it can inform decisions about the location of shelter. Spatial data on land tenure (especially customary areas and informal settlements) and the extent of the damage can assist the response. Land agencies and customary groups should be involved in providing information on land availability and decisions about which land to use for emergency shelter. Given the history of conflict over land in the Pacific islands, care is needed to ensure that any provision of alternative land does not jeopardize the rights and livelihoods of others. During this process, government agencies should ensure that the legitimate tenure rights of displaced persons are recognized, recorded and protected. This may involve a low-cost method of recording rather than issuing formal land titles.

Recovery and reconstruction

Early on in the recovery phase land agencies may need to reinstate the survey infrastructure to support later boundary surveys and associated resettlement and rebuilding. In some cases, as in the example from Vanuatu, extensive surveys may be required to reinstate or extend survey networks and ground marks.

Disputes and claims over land must be resolved through adjudication. *The Voluntary Guidelines on the Responsible Governance of Tenure* (FAO/CFS, 2012) recommend that all legitimate rights to land be recognized, respected and protected. In the recovery and reconstruction phase this means that every attempt should be made to establish all the legitimate pre-disaster rights to land. Where public records are out of date, lost or damaged, other forms of evidence may be needed and the knowledge from customary groups will be important in many cases. Given the oral nature of customary tenure, problems may exist where the person with the knowledge dies in the disaster.

Resettlement decisions are a key issue in the Pacific region. In many PICs in the tropical cyclone region, a large percentage of the population lives in coastal zones. In those countries careful consideration is being given to decisions about relocation away from the coast. In extreme cases, such as in Kiribati and Tuvalu, sea level rise will place enormous pressure on a large proportion of the population to relocate, in some cases to another country. Section 24.5 of the Voluntary Guidelines calls on states and other parties to address tenure during the reconstruction phase:

> "Persons who are temporarily displaced should be assisted in voluntarily, safely and with dignity returning to their place of origin. Means to resolve disputes over tenure rights should be provided. Where boundaries of parcels and other spatial units are to be re-established, this should be done consistent with the principles of consultation and participation of these Guidelines. Where people are unable to return to their place of origin, they should be permanently resettled elsewhere. Such resettlement should be negotiated with host communities to ensure that the people who are displaced are provided with secure access to alternative land, fisheries, forests and livelihoods in ways that do not jeopardize the rights and livelihoods of others"
>
> (FAO/CFS, 2012).

Reconstruction will require restoring capacity in land administration agencies and also that of customary groups. These limitations, with increased demand on land agencies following a disaster, mean that land agencies may require significant support and capacity building to meet demand. Lessons from other jurisdictions indicate that land institutions face the greatest demand during reconstruction when decisions need to be made on rights to each parcel of land prior to rebuilding. The best results are achieved when the appropriate land agency is able to coordinate an adjudication process that actively includes the community in all decisions in a manner that is consistent with public records of the rights existing prior to the disaster.

Land governance and disaster risk management

Given the predominance of informal tenures in the Pacific islands, addressing tenure insecurity is central to the implementation of DRR. One of the main challenges is reducing land disputes following disasters. This will require improved recording of all legitimate land rights, improved land use control and effective valuation of non-formal tenures so that the determination of adequate compensation for resettlement and land acquisition is equitable. The case study on the relocation of Gaua Island's inhabitants clearly indicates that planning in advance for relocation reduces sensitivity disagreements over land issues during the relocation.

Given the predominance of informal tenures in the Pacific islands, addressing tenure insecurity is central to the implementation of DRR

AusAID (2008) recommended that governments support customary land dealings by creating an enabling environment for recognizing and enforcing customary tenure, and enforcing fair dealings in the use of land, as well as resolving land conflicts. Land governance priorities include:

- Providing safeguards for vulnerable groups.
- Formalizing existing settlements on state land.
- Formalizing existing settlements on customary land.
- Making more formal land available for urban growth in consultation with customary groups. This may involve partnerships between customary authorities and government.

Tenure insecurity is an issue for an increasing number of people in the Pacific region, which impacts customary groups, individual members of customary groups, informal settlers, people with leases and others. The result is fear of investing in land or improving land that might be lost. Loss of access to land and livelihoods often results in conflict. Policy reform to improve access to credit may not succeed until people have secure tenure. Also, a combination of high hazard risk and poor tenure security on informal settlements increases vulnerability of residents. Therefore, tenure security is a high priority for all people and particularly for the more vulnerable.

The Voluntary Guidelines call for states to address tenure in disaster prevention and preparedness programmes. Measures for addressing tenure include:

- Undertaking hazard-risk maps and assessments.
- Providing information to vulnerable people about their rights to land.
- Protecting land records. Systems for recording rights should survive natural disasters and could be stored off-site.
- Developing legal and policy frameworks that recognize the legitimacy of informal rights to land and provide protection from land grabbing in the event of a disaster.
- Developing land-use plans that delineate areas of hazard-risk and enforcement of these plans, and which identify areas for the temporary resettlement of people who may be displaced by natural disasters. Rules

for providing tenure security in such areas should be agreed upon and included in land policies.

- Developing baseline information on legitimate but informal land tenure rights. This information should be collected for areas that could be affected by natural disasters.

The fit-for-purpose approach to land administration advocated by the multi-lateral agencies is very appropriate for PICs (FIG/World Bank, 2014). Fit-for-purpose approaches to recording land rights could be trialled in larger economies, such as Fiji, to provide lessons for the smaller nations.

However, as AusAID (2008) noted "The capacity of government institutions in many Pacific countries to coordinate and implement policy reforms often falls short of their ambitions. Therefore, governments should intervene in customary land systems only if it is absolutely necessary – for example, to improve tenure security, to resolve conflict or to develop public infrastructure…. Unnecessary interventions can create new problems. For example, drawing lines on a map to delineate ownership can lead to disputes over land when there was no previous disagreement about 'unwritten' boundaries. Because recording such information can be expensive and take a very long time, governments should consider limiting this sort of work to urban areas, or where disputes have arisen between customary groups, or where customary owners are seeking to develop some of their land…. Governments should also be wary of trying to change aspects of customary land systems that are working effectively or if there is no demand for change from the community. The tenure systems of most customary groups continue to insure members against the risks of landlessness, crop failure, environment stress, income loss and illness or disability. Close-knit groups often create, through custom and law, land regimes that are highly efficient and that adapt to changes in the requirements of their members (Ellickson, 1993). These systems may be providing sufficient tenure security at little cost to encourage all of the available forms of investment".

CONCLUSIONS

Pressures such as urbanization in parts of the Pacific region are weakening customary authority. Therefore, joint responses to climate change and disaster risk involving customary groups and government will be important. The land agencies and NDMOs must work together to address land issues in DRM. Overlaps between CCA and DRM provide opportunities for synergies that are especially important for smaller PICs and atoll states such as Kiribati and Tuvalu. Limitations in institutional capacity highlight the importance of addressing land issues as part of a DRR approach rather than after a disaster occurs.

One of the key issues to emerge from the discussions during the training in Fiji was the need for land and NDMO agencies to work together to address land issues in the context of natural disasters. Given the large areas of customary land in many PICs, the customary groups must be involved in DRR and also in addressing the land issues identified in this paper. However, capacity development is needed for both government agencies and customary groups.

Capacity development is needed for both government agencies and customary groups

Another key issue to emerge was that care is needed when making decisions about resettlement. One of the lessons from recent disasters in the Pacific islands is that relocation is complex and should be seen as a last resort. In the case where long-term relocation is required, the customary land tenure system may be flexible enough to provide reasonable solutions. However, this is not the case everywhere and planning must include responses that explicitly address and limit potential conflicts by providing secure tenure for the host community as well as for those resettled. Often the most vulnerable people (including women, elderly, children, poor and outsiders) face the greatest impact and uncertainty and have the least resources to cope with and recover from disasters. Measures to protect these people from land grabbing and eviction must include improvements to their tenure security. Implementing responsible governance of tenure will help protect the vulnerable from the impacts of natural disasters and climate change.

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